

WHAT IS CLAIMED IS:

5 1. An end-seal patch bag comprising a heat-shrinkable bag comprising a tubular bag film, and a heat-shrinkable patch comprising a patch film, the patch being adhered to the bag, the patch extending across an entire width of a first lay-flat side of the tubular bag film, the patch bag having a seal across a bottom region thereof, the seal being continuous across the entire width of the lay-flat bag film, the seal being through both the patch as well as through both lay-flat sides of the bag, the seal being the only seal across the bag.

10 2. A patch bag comprising a heat-shrinkable bag comprising a tubular bag film, and a heat-shrinkable patch comprising a patch film, the patch being adhered to the bag, the patch bag having a seal which is through both the patch as well as through both lay-flat sides of the bag, the seal having a strength of at least 26 inches of water in a Standard Linear Ramp Hot Burst Grease Test.

15 3. The patch bag according to Claim 2, comprising a first patch adhered to a first lay-flat side of the bag, and a second patch adhered to a second lay-flat side of the bag, and the seal is through both patches and the bag film.

20 4. The patch bag according to Claim 3, wherein the patch bag is a side-seal patch bag, and both the first patch and the second patch extend across an entire length of the bag, the patch bag having a first seal along a first edge of the bag and a second seal along a second edge of the bag, and a seamless folded bottom edge, the first and second seals being through the first patch, the second patch, and the bag film.

25 5. The patch bag according to Claim 3, wherein the patch bag is an end-seal patch bag, and both the first patch and the second patch extend across an entire lay-flat width of the bag film in a lay-flat position, the end-seal patch bag having a bottom seal across the bag, the seal being through the first patch, the bag, and the second patch.

30 6. The end-seal patch bag according to Claim 5, wherein an upper region of the tubular bag film is not covered by a patch.

35 7. The end-seal patch bag according to Claim 5, wherein the patches are adhered to the tubular bag film with an adhesive.

8. The end-seal patch bag according to Claim 5, wherein the patches are adhered to an outside surface of the tubular bag film, and the entirety of the patch films are adhered to the tubular bag film.

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9. The end-seal patch bag according to Claim 5, wherein each of the patches is wider than the lay-flat width of the tubular bag film.

10. The end-seal patch bag according to Claim 5, wherein the tubular bag film is seamless.

11. The patch bag according to Claim 2, wherein the seal is made through films having a total thickness of from about 5 to 30 mils.

12. The patch bag according to Claim 11, wherein the seal is made through films having a total thickness of from about 10 to 20 mils.

13. The patch bag according to Claim 2, wherein the seal has a width of from about 0.015 inch to about 0.25 inch.

14. A process for making a patch bag, comprising:

(A) adhering first patch film to an outside surface of a first lay-flat side of a lay-flat bag film tubing, the first patch having a width greater than the width of the lay-flat tubing;

(B) adhering second patch to an outside surface of a second lay-flat side of a lay-flat bag film tubing, the second patch also having a width greater than the width of the lay-flat tubing;

(C) sealing an inside surface of the film tubing to itself, the sealing being carried out by applying heat to each of the patch outside surfaces, the heat being applied by a first means for heating and a second means for heating, the first and second means for heating being in alignment with one another, with the patches and bag tubing therebetween during sealing; and

(D) cutting across the tubing.

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15. The process according to Claim 14, wherein the first means for heating comprises a first seal bar which has a flat surface which is in alignment with, and oriented towards, the second means for sealing, which comprises a second seal bar.

16. The process according to Claim 15, wherein the second seal bar has a convex surface which is in alignment with, and oriented towards, the flat surface of the first seal bar.

17. The process according to Claim 15, wherein the second seal bar has a flat surface which is in alignment with, and oriented towards, the flat surface of the first seal bar.

18. The process according to Claim 17, wherein the first seal bar and the second seal bar each comprise annealed nickel chromium 80.

19. The process according to Claim 15 wherein the first seal bar is in a first seal jaw assembly, and the second seal bar is in a second seal jaw assembly, and at least one of the seal jaw assemblies comprises a means for shock absorption.

20. The process according to Claim 19, wherein the means for shock absorption comprises a resilient member.

21. The process according to Claim 16, wherein the bars exert a pressure on the films of from about 50 to 150 psi.

22. The process according to Claim 15, wherein the temperature of the first seal bar is controlled so that it reaches an average temperature of maximum temperature of from about 180°F to 400°F in the vicinity of the film being sealed, and wherein the temperature of the second seal bar is controlled so that it reaches a maximum temperature of from about 180°F to 400°F in the region of the film being sealed.

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23. The process according to Claim 22, wherein the means for controlling the temperature constantly monitors and controls the voltage and current flowing through the first and second sealing bars, so as to constantly monitor and control the temperature of the first and second sealing bars at a pre-set maximum temperature during sealing.